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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,421	11/14/2003	Sudhakar K. Rao	81136 7400	2283
22242	7590	01/25/2005	EXAMINER	
FITCH EVEN TABIN AND FLANNERY 120 SOUTH LA SALLE STREET SUITE 1600 CHICAGO, IL 60603-3406			NGUYEN, HOANG V	
			ART UNIT	PAPER NUMBER
			2821	

DATE MAILED: 01/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/714,421

Applicant(s)

RAO ET AL.

Examiner

Hoang V Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6-23 is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☒ Claim(s) 2-5 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Gauthier et al (US 4,847,574).

Gauthier (abstract and Figures 1, 5 & 6) discloses an antenna comprising a reflector having a reflector surface profile for reflecting a signal comprising a plurality of communication bands; a multi-depth corrugated horn assembly for receiving the signal comprising the plurality of communication bands; a stepped waveguide 15 coupled to the corrugated horn; a first polarizer 20 coupled to the stepped waveguide for separating a first communication band from the plurality of communication bands; a second polarizer 30 coupled to the stepped waveguide for separating a second communication band from the plurality of communication bands; and a third polarizer 80 coupled to the stepped waveguide for separating a third communication band from the plurality of communication bands.

Allowable Subject Matter

3. Claims 2-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. Claims 6-23 are allowed.

5. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 2, Gauthier fails to further teach, among other features, an input matching section coupled between the multi-depth corrugated horn and the stepped waveguide.

Regarding claims 3-5, Gauthier fails to specifically teach, among other features, that the first polarizer comprises a plurality of 20 GHz slots coupled to the stepped waveguide; a first plurality of band reject filters coupled to the plurality of 20 GHz slots; a first plurality of magic T networks coupled to the first plurality of band reject filters; a K-band short slot coupler coupled to the first plurality of magic T networks; a 20 GHz LHCP port coupled to the K-band short slot coupler; and a 20 GHz RHCP port coupled to the K-band short slot coupler.

Regarding claims 6-8, the antenna apparatus of Gauthier would enable the method of transmitting data comprising reflecting a signal comprising a plurality of communication bands into a corrugated horn having a dual depth corrugations; and separating each of the plurality of communication bands with a multiband polarizer. Gauthier, however, fails to further teach that the plurality of communication bands comprises specifically of a K-band signal; a Ka-band signal and an EHF-band signal.

Regarding claim 9, Gauthier discloses a feed for an antenna system comprising a wideband corrugated horn comprising a plurality of dual depth corrugations; a waveguide coupled to the wideband corrugated horn; a first polarizer; a second polarizer; and a third polarizer. Gauthier, however, fails to specifically teach a configuration wherein the waveguide comprising a first step junction and a second step junction; wherein the first polarizer coupled to the waveguide in between the wideband corrugated horn and the first step junction; the second

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polarizer coupled to the waveguide in between the first step junction and the second step junction; and the third polarizer coupled to the waveguide after the second step junction.

Claims 10-15 are allowed for depending on claim 9.

Regarding claim 16, Gauthier discloses an apparatus for use in a communication system comprising means for reflecting a set of beams from an antenna into an antenna feed; means for separating a first signal from the set of beams; means for separating a second signal from the set of beams; and means for separating a third signal from the set of beams. Gauthier, however, fails to further teach that the beam comprising specifically a K-band signal, a Ka-band signal and an EHF-band signal.

Claims 17-23 are allowed for depending on claim 16.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Patent 6,005,528 discloses a dual band feed comprising a corrugated horn and a waveguide.
- Patent 6,094,175 discloses an omni directional antenna.
- Patent 6,812,807 discloses a multiband tracking feed.


7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang V Nguyen whose telephone number is (571) 272-1825. The examiner can normally be reached on Mondays-Fridays from 9:00 a.m. to 5:00 p.m..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoang Nguyen can be reached on (571) 272-1825. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hvn
1/21/05



**HOANG V. NGUYEN
PRIMARY EXAMINER**